

SECTION 1. INTRODUCTION

PURPOSE

This local area network (LAN) design guide was developed as a guideline in determining what is required to implement a LAN. This document provides greater understanding of LAN operation in order to:

- develop a more comprehensive statement of work for a LAN design
- assist in developing and performing a site survey
- justify items in a site concurrence memorandum validate the Engineering Installation Plan (EIP) justify equipment and installation costs understand network components and operation examine acceptance test procedures for completeness
- confirm installation procedures provide guidelines for LAN operation and maintenance.

SCOPE

The major sections of this guide are outlined below.

LAN Tutorial

This section provides a standards-based overview of LAN operations, equipment, and software. It is used as a tutorial for those unfamiliar with LAN terminology and provides references for the design section.

**LAN Design
Process**

This section provides instruction in the design of standards-based LANs that use 10BaseT, 10BaseF, and fiber distributed data interface (FDDI). Transmission media

specified includes category 5 unshielded twisted pair (UTP) and multimode fiber optic cable. The design process presented in this guide covers a new LAN installation in new or existing buildings and covers BLACK or unclassified data only. This design process helps the user create a basic Ethernet LAN and three performance variations of that LAN. To assist the user in selecting a performance variation and estimate the cost of the LAN, a detailed cost model has been developed. The cost model presents the basic LAN design and the three performance variations in small, medium, and large configurations.

**LAN Start-Up and
Operations**

This section provides guidelines for staffing and training, installation, and network management.

References

Appendix A contains a list of references used in this pamphlet.

**Site Survey
Checklists**

Appendix B provides blank site survey checklists to be used in determining the needs of the proposed LAN.

Glossary

Terms and definitions used in this pamphlet are listed in the glossary.

Bibliography

Additional reading and source materials are listed in the bibliography.